

Brad Steele, Energy Federation, Inc. - July 24, 2003

1. I probably was one of the first, and loudest voices raising concerns about the reliability of certain types of compact fluorescent (CF) fixtures, and identifying thermal issues as probably being the most common contributor to fixtures failing prematurely. Still, I'm not quite sure whether the proposed requirements in the new ENERGY STAR fixture specifications that will require that manufacturers test all recessed and electronically ballasted ceiling flush mount fixtures is entirely fair and logical, and will lead to EPA achieving other stated objectives for its ENERGY STAR lighting program – such as eventually having only electronically ballasted fixtures qualify for ENERGY STAR listing (pg. 25, Version 3.2).

LRC testing, which the revised specifications refer to, did indeed show most recessed and unvented ceiling CF fixtures generated and trapped considerable heat, raising ballast case temperatures well above 75C, and in many cases (mostly with magnetically ballasted fixtures) above even 90C. I don't know that I would infer from the LRC test data that the industry should only be concerned about thermal environments in these select categories. While I would assume heat would be far less damaging to the components of a magnetic ballast than an electronic ballast, having temperatures above 90C would not seem to be a good thing (safety considerations, lamp lumen output...). The penalty of requiring electronic ballast fixtures to be tested might result in fewer such fixtures being submitted for ENERGY STAR listing, and conversely, a higher ratio of magnetically ballasted fixtures having ENERGY STAR listing. I would not see this as a positive development.

I must confess, that although I have read the proposed Version 3.2 specs, and letters from EPA explaining some of the key proposed changes reflected in the specs, I am not entirely sure how painless or onerous the testing requirements will be. Where ENERGY STAR specifications indicate testing is required, usually the manufacturer must provide NVLAP or independent laboratory test results. No fixture manufacturers, to my knowledge, meet either of these requirements, so testing any particular ballast, or fixture 'platform,' could be quite expensive. The language in the 3.2 specs seems to imply that for the Maximum Ballast Operating Case Temperature test, in-house test results might suffice, however. If this is a correct interpretation, it would certainly make compliance much easier, and less expensive.

I hope my concern proves baseless, and that manufacturers indicate that complying with these new testing requirements is not a problem. A couple fixture manufacturers I have spoken with do not seem to have examined the Proposed Version 3.2 specs carefully as yet, and do not seem to have an understanding of the implications of the proposed changes. The time frames for compliance are very short as well. If these are adhered to, there might be hundreds of (at least temporary) ENERGY STAR fixture de-listings by the end of the year.

2. The proposed specs seem to almost assume that the standard 'model' used in manufacturing a CF fixture is that the manufacturer buys lamps and ballasts from suppliers that have detailed specifications, certifications, and test results they can supply to the manufacturer. This is largely true for manufacturers making and selling 'hybrid' fixtures – or fixtures that use magnetic ballasts with electronic, or 'quick starting' lamps. But most of the companies selling electronic ballast CF fixtures, and certainly, the companies with high market share (of CF fixtures), either use their own ballasts, or source their ballasts. I don't know how they come up with a maximum ballast case temperature that one could regard as an 'apples to apples' comparison with the ratings provided by ballast suppliers on the NEMA/ALA Matrix. A ballast supplier to OEMs might use different criteria for establishing maximum ballast case temperatures than a fixture manufacturer responsible for indicating those temperatures are for the ballasts it is using

in its products. There seemed to be a fair degree of 'sensitivity' on this issue at some of the roundtable discussions held at LRC, and I can understand why there would be.

3. I am glad that EPA is adding CF retrofit products for recessed cans. It will be interesting to see what fixtures meet the minimum 900 delivered lumens standard in an IC rated downlight. I might have considered a lower threshold, as I would imagine many 50w to 75w R-lamps (incandescent) don't meet that criteria.
4. I'm not sure how the exemption for exterior CF fixtures not employing photocells works in practice. Can a manufacturer list an exterior fixture without a photocell as an ENERGY STAR product, and label it thusly, as long as it uses language on the package stating that the product actually will not be an ENERGY STAR product unless it is wired in conjunction with a photocell, or photo-sensitive shut-off device? I am not a big fan of the requirement that exterior fixtures need to have photocells to be ENERGY STAR qualified, as all our experience indicates consumers have many more problems with such fixtures than they have with energy-efficient exterior fixtures that do not have photocells. Even so, it seems like this section could be interpreted in a variety of ways.